LOW *TRANS*-FATTY ACID FAT COMPOSITIONS; LOW-TEMPERATURE HYDROGENATION, E.G., OF EDIBLE OILS

ABSTRACT OF THE DISCLOSURE

The present disclosure provides low *trans*-fatty acid fat compositions, methods of hydrogenating unsaturated feedstocks (e.g., oils), and hydrogenation catalyst compositions. One exemplary method involves producing an activated catalyst composition by heating a nickel-based catalyst to a first temperature of at least about 100° C in the presence of hydrogen and a fat component. An unsaturated feedstock may be contacted with the activated catalyst composition and hydrogenated by sustaining a hydrogenation reaction at a second temperature of no greater than about 70° C. Some specific implementations of the invention permit the production of partially hydrogenated seed oils with low *trans*-fatty acid contents.